FOR CONTRACT NO.: 12-0K6204

INFORMATION HANDOUT

MATERIALS INFORMATION

FOUNDATION RECOMMENDATION
(Overhead Sign Structure 100)

ROUTE: 12-Ora-5-17.1/ 17.8

State of California

Business, Transportation and Housing Agency

Memorandum

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To: MR. KAMRAN MAZHAR
D12- Design Branch F

Date: February 22, 2011

File: 12-ORA-005 - PM 17.1/17.8
EA: 12-0K6201
OH Sign No. 100

Attention: Benjamin Ionescu

From: **DEPARTMENT OF TRANSPORTATION**
DIVISION OF ENGINEERING SERVICES
Geotechnical Services
Office of Geotechnical Design – South 1
Branch D

Subject: Foundation Recommendation for Overhead Sign No. 100 at Alicia Parkway Off-Ramp of Southbound Interstate 5

INTRODUCTION

As requested by your office in a memorandum dated August 18, 2010, the Office of Geotechnical Design South 1 (OGDS1), Branch D has prepared foundation recommendations for the construction of Cast-in-Drilled-Hole (CIDH) pile foundations to support the proposed Overhead Sign No. 100 at Alicia Parkway Off-Ramp of southbound Interstate 5, in Laguna Hills, Orange County.

SITE DESCRIPTION

The proposed Overhead (OH) Sign No. 100 to be installed at Station 58+88 "A" Line Alicia Parkway Off-Ramp and will be 53 feet wide and 18.75 to 20 feet high. The overhead truss is Light Weight Type A-2 (size TS 10 x 6 x 3/8) with two posts (12 NPS, t=1/2"). Each post will be supported by a 36-inch diameter and 15-foot deep CIDH pile in accordance with Sheet S43 and Sheet S49 of Standard Plans (May 2006). Finished grade elevation varies from 393.20 feet to 394.45 feet at proposed OH sign location.

SITE SUBSURFACE CONDITION

As-Built data from Alicia Parkway Overcrossing Bridge No. 55-0591 field investigation (January 1971) was used in conjunction with OGDS1 field visits in making foundation recommendations for proposed OH Sign No. 100.

Field investigation conducted in January 1971 for Alicia Parkway Overcrossing Bridge No. 55-0591 consisted of performing two rotary borings and two cone penetration tests. Based on As-Built Log of Test Borings dated January 1971, subsurface material consist of dense to very dense friable, poorly cemented, fine grained sandstone of the Niguel formation. The cone penetration test B-1 located 58 feet left of Station 18+36 of Alicia Parkway Centerline is the closest to the proposed sign and is approximately 400 feet to the east.

No Groundwater was encountered during the 1971 investigation to the maximum depth of 36 feet drilled (elevation 347 feet).

CORROSION EVALUATION

No corrosion tests were performed for this project. Due to absence of corrosion test results, District Design may consider the use of corrosion resistant concrete for OH Sign foundation.

FOUNDATION RECOMMENDATIONS

Based on the Sign Details and Layout plan provided by Mr. Ben Ionescu of District 12 Design Branch F via email on January 12 and 24, 2011 and the AS-Built subsurface condition data, OGDS1 believes that the foundation for OH Sign No. 100 is adequate as proposed.

CONSTRUCTION CONSIDERATIONS

The following recommendations are made for CIDH pile construction should be incorporated in the plans and special provisions of the project.

1. The contractor shall clean out the bottom of the shaft prior to placing the cage and the concrete. Concrete placement for construction of the CIDH pile should be completed within the same day that excavation of the drilled hole has been completed.
2. Hard drilling is anticipated due to subsurface formational material and special drilling equipment may be required.
3. Groundwater is not expected during drilling or construction of CIDH piles. However, if perched water is encountered, the contractor shall pump out the water prior to pouring concrete.
4. Moderate to minor caving may occur in drill holes. The contractor shall bring any occurrence of caving to the notice of the engineer for appropriate action.

For further information, contact Akbar Mehrazar at 949-440-3415 or Shiva Karimi at 213-620-2146.

Prepared by: Date: 2/22/11

A Mehrazar

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Transportation Engineer
Office of Geotechnical Design–South 1
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Supervised by: Date: 2/22/11

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